SUBSECTION 8.11

Visual Resources

8.11 Visual Resources

8.11.1 Introduction

Visual resources are the natural and cultural features of the landscape that can be seen and that contribute to the public's appreciative enjoyment of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located.

This section was prepared following the CEC guidelines for preparing visual impact assessments for AFCs. Section 8.11.2 identifies the laws, ordinances, regulations, and standards applicable to the project. Section 8.11.3 documents the visual conditions that now exist in the project area. Section 8.11.4 evaluates the implications that the proposed project would have for the public's experience of the project area's aesthetic qualities. Section 8.11.5 discusses the significance of the project impacts. Section 8.11.6 discusses the potential cumulative impacts of this and other visual projects in the area. Section 8.11.7 summarizes the mitigation measures to reduce the project's impacts on visual resources. Section 8.11.8 lists the references used in preparation of this section.

Figures 8.11-1 and 8.11-2 indicate the location of the viewpoints, viewsheds, and key observation points referenced in the section. (All figures for this section are located at the back of this section.)

8.11.2 Laws, Ordinances, Regulations, and Standards

8.11.2.1 Introduction

This section describes the LORS relevant to the visual resource issues associated with the CVEC project. No federal, state, or regional visual resource laws, ordinances, regulations, or standards exist. However, visual resource and urban design concerns applicable to the project are addressed in the City of San Joaquin General Plan, the City of San Joaquin Zoning Ordinance, the Fresno County General Plan, and the Fresno County Zoning Ordinance.

As indicated in the Land Use analysis (Section 8.4), the generating facility site is located within the city limits of the City of San Joaquin (City). The project's natural gas line, reclaimed water line, and transmission line are located in the City and unincorporated Fresno County. As described in Section 6.0, the natural gas pipeline will include a gas metering station located at the western terminus in unincorporated Fresno County. Table 8.11-1 provides a brief summary of the City and County plans and ordinances pertinent to the project elements. The specific provisions of each plan or ordinance that have potential relevance to the project are identified in Sections 8.11.2.2 through 8.11.5.

TABLE 8.11-1
Laws, Ordinances, Regulations, and Standards Applicable to CVEC Visual Resources

LORS	Purpose	Application (AFC Section Explaining Conformance)	Agency Contact
City of San Joaquin Comprehensive General Plan and Environmental Impact Report (1996)	Describes policies for land use, circulation, community facilities, and environmental resource management for the plan area.	Section 8.11.1.2	Shahid Hami City Manager 21900 Colorado P.O. Box 758 San Joaquin, California 93660 559-693-4311

TABLE 8.11-1
Laws, Ordinances, Regulations, and Standards Applicable to CVEC Visual Resources

LORS	Purpose	Application (AFC Section Explaining Conformance)	Agency Contact
City of San Joaquin Zoning Ordinance (2001b)	Establishes zoning districts governing land use and the placement of buildings and district improvements.	Section 8.11.1.3	Same as above
Fresno County General Plan (2000)	Describes policies for land use, circulation, community facilities, and environmental resource management for the plan area. It is a statement of the County's vision for its ultimate physical development.	Section 8.11.1.4	Richard Perkins Planner Dept of Planning and Resource Management 2220 Tulare St., 8th Floor Fresno, CA 93721 559-262-4022
Fresno County Zoning Ordinance (2001a)	Establishes zoning districts governing land use and the placement of buildings and district improvements.	Section 8.11.1.5	Same as above

8.11.2.2 City of San Joaquin General Plan

The project and portions of the natural gas, water, and transmission lines are located in the City of San Joaquin and subject to the City of San Joaquin Comprehensive General Plan. The provisions of the plan applicable to the project are summarized and evaluated in Table 8.11-2.

TABLE 8.11-2
Conformity of CVEC with the City of San Joaquin Comprehensive General Plan

Provision	Discussion of Project's Conformity to Provision
Major Goals	
Goal No. 1: *Policies and proposals of the General Plan shall seek to expand job-creating and revenue generating activities, including levels of retail, commercial service, and industrial expansion that are necessary to support government services required by the expanding population base consistent with the rate of growth to be allowed*.	CVEC will be consistent with this goal and policy because it will be located in an area where it will be compatible with the City's overall land use and urban design strategy, and it will have generous setbacks from surrounding roads and adjacent properties. The project's extensive landscaping will screen views into the site, protecting public vistas.
Policy 1.B.5. Industrial development should be compatible with the surrounding area. This shall include adequate environmental mitigation, for noise, orders (sic), potential releases of hazardous materials, and public vistas.	CVEC will be consistent with this goal and policy because it will be located in an area where it will be compatible with the City's overall land use and urban design strategy. In addition, the project will comply with local noise ordinance and will not release hazardous materials.
Goal No 6: *New public and private development shall take into account community image and appearance. Development regulations shall express appropriate concern for visual quality. Efforts in this endeavor will be reflected in site planning and engineering, architectural design, landscaping, street and open space improvements, business functions and cultural activities.*	CVEC will be consistent with this goal and policy because it will be located in an area where it will be compatible with the City's overall land use and urban design strategy, it will have generous setbacks from surrounding roads and adjacent properties and will be heavily landscaped. The landscape plan will include establishment of a landmark composition at the intersection of Colorado and Springfield Avenues to mark the gateway to the community.
Policy 6.A.1: The City shall take into consideration as one factor in urban development the aesthetics of development.	

TABLE 8.11-2
Conformity of CVEC with the City of San Joaquin Comprehensive General Plan

Provision	Discussion of Project's Conformity to Provision
Land Use Industrial Land Use Policies and Proposals Industrial sites should be subject to the same standards for visual screening with ornamental walls, screen fencing and landscaping and street trees, frontage landscaping and parking lot landscaping as provided for commercial areas. Screening of outdoor storage should be required.	CVEC will be consistent with the objectives of this policy because it will include extensive landscape screening of the project site and project facilities. However, the project's landscape plan varies in some details from the specifics of the zoning ordinance's standards for commercial areas because the project site is much larger than the typical industrial site, and will be at the City's interface with the surrounding agricultural landscape, where some of these requirements are not necessarily appropriate.

Source: City of San Joaquin Comprehensive General Plan and EIR, 1996.

8.11.2.3 City of San Joaquin Zoning Ordinance

According to the City of San Joaquin Zoning Ordinance, the project site is zoned M (Manufacturing). The provisions of the ordinance applicable to the project are summarized in Table 8.11-3.

TABLE 8.11-3
Conformity of CVEC with the City of San Joaquin Zoning Ordinance

Provision	Discussion of Project's Conformity to Provision
Section 17.60 M; Manufacturing Zones (M1)	
17.60.030 Height of Structures The maximum height of any building shall be 75 feet; provided, however, additional height may be permitted if a height variance is first secured.	Because the 145-foot high HRSG stacks, the tops of the HRSG units and 120-foot high auxiliary boiler stack will exceed the 75-foot height limit specified, it will be necessary to secure a height variance, as provided for in this provision of the ordinance.
17.60.040 Yard Requirements Front yards. There shall be no requirements for front yards except where the frontage in a block is partially in an R zone, in which case the front yard shall be the same as required in such R zone. Side Yards. There shall be no requirements for side yards except where the side of a lot abuts upon the side of a lot in an R zone in which case the side yard shall not be less than 10 feet. Rear Yard. There shall be no requirements for rear yards except where the rear of a lot abuts on an R zone in which case the rear yard shall be not less than 10 feet.	Because CVEC project site does not abut any residential areas, no setbacks are required. In any case, even though setbacks are not required, all major project facilities will be set back 100 feet or more from the lot lines.

TABLE 8.11-3
Conformity of CVEC with the City of San Joaquin Zoning Ordinance

Provision	Discussion of Project's Conformity to Provision
17.96 Landscaping **17.96.010 Landscaping** The following standards shall apply to all new development occurring in the City: Native tree plantings or vegetation consistent with zone 7 of the Western Garden Sunset Book shall be the recommended species type in all landscape designs. The minimum tree size shall be a fifteen-gallon planting. The number and spacing of trees for each landscaping plan will vary; however, as a general standard one fifteen-gallon tree shall be planted for every twenty-five feet of frontage along a street. All landscapes shall be provided with an appropriate irrigation system and maintained to an acceptable community level. Prior to final occupancy, the developer of a new building or use that requires a site plan shall provide the City a one-year landscaping maintenance agreement that is applicable to the new building or use. Landscape planters shall be surrounded with a six-inch high concrete curb or similar type barrier to protect the landscaping from foot and automobile traffic. Front and street side yards of uses requiring site plan review shall have 65 percent of the area composed of turf. The balance of the area can be composed of trees, shrubs, groundcover, or hardscape. Consideration should be given to the use of Xeriphytic (drought tolerant) plants and grasses. The front yard setback area of all new development shall be landscaped. In addition, those side and rear setback areas, as determined by the planning director, which are directly visible from public roads, easements, and properties, shall also be landscaped.	The conceptual landscape plan that has been developed for the project is consistent with the objectives of these guidelines, but varies in some details because the project site is much larger than the typical industrial site, and will be at the City's interface with the surrounding agricultural landscape, where some of these requirements are not necessarily appropriate. All of the trees planted will have a minimum size of 15 gallons. Trees will be provided along Springfield Avenue, the site's only street frontage, but these will be planted in clusters rather than 25 feet on center. The total number of trees used on the site will far exceed the number that the one tree per 25 feet of frontage would require. The plan specifies the use of plant species which are commonly used in the area, and which do well under local climatic conditions. All planted areas will be provided with appropriate irrigation, and agreements will be put in place to assure proper maintenance of the plantings and replacement of any plantings which do not survive. In general, the planting plan will not require the use of planters. Should planters be needed in specific areas, their design will conform to these standards. Because of its location in a Manufacturing zone, there are no front or street-side yards and thus the requirement for turfed areas is not applicable. However, landscaping will be provided in appropriate areas on all sides of the project site. In the planted areas, a combination of trees, shrubs, and groundcovers will be used. The planting plan emphasizes the use of plant materials with low water needs.

Source: City of San Joaquin Zoning Ordinance, January 25, 2000.

8.11.2.4 Fresno County General Plan

The Fresno County General Plan (2000) contains several policies that are potentially applicable to the project's linear facilities and gas metering station. These policies and the project's conformity with them are summarized in Table 8.11-4.

TABLE 8.11-4
Conformity of CVEC with the Fresno County General Plan

Provision	Discussion of Project's Conformity to Provision
Public Facilities and Services Goal PF-J: *To provide efficient and cost-effective utilities that serve the existing and future needs of people in the unincorporated areas of the County.* PF-J.2: The County shall work with local gas and electric utility companies to design and locate appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents. PF-J.3: The County shall require all new residential development along with new urban commercial and industrial development to underground utility lines on-site.	Because the natural gas line developed to serve the project will be placed underground and the surface restored to its original condition, it will not result in any lasting visual effects. The gas metering station associated with the gas line will consist of elements that are low to the ground, and will be given color treatment and landscaping that will allow them to blend into their setting. As a consequence, the gas metering station will not conflict with this policy. The electric transmission component of the project will be consistent with this policy. The length of new transmission line required will be very short and will be located in an area where the landscape is already dominated visually by a transmission line and substation. The provision related to undergrounding applies to distribution lines rather than transmission lines.
Open Space and Conservation Goal OS-K: *To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.* OS-K.1: The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas. OS-K.4: The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.	The project is consistent with these policies. The features of the project are not located in areas that are part of a designated scenic vista. CVEC project and gas metering station sites do not contain any scenic features and do not have intrinsic scenic qualities that require protection. The landscape plan for CVEC site will provide screening of the project facilities in views from the surrounding roadways and the plantings along the project's perimeters will add features of visual interest to the roads' edges.

Source: Fresno County General Plan, 2000.

8.11.2.5 Fresno County Zoning Ordinance

Under the Fresno County Zoning Ordinance, the project's linear facilities and gas metering station fall within the AE, Exclusive Agriculture zone. In this zone, there are no specific aesthetic guidelines that would apply to pipelines or facilities like the gas metering station (Perkins, 2001). The gas metering station would meet all height and setback requirements for this zone.

8.11.2.6 Summary of Project's Conformity with Applicable LORS

The project is consistent with applicable laws, ordinances, regulations, and standards related to visual resource issues with the exception that the plant stack height would conflict with the City of San Joaquin's structural height limit of 75 feet. However, the ordinance provides for height variances, and if the City grants this variance, this conflict will be eliminated.

8.11.3 Affected Environment

8.11.3.1 Regional Setting

8.11.3.1.1 Existing Conditions in the Project Vicinity

The project will be developed in western Fresno County at the locations indicated on Figure 2.1-1. The site of the energy center itself is located within the city limits of the City of San Joaquin, and lies in an industrial area at the southeastern corner of the community. The project area is a part of the San Joaquin Valley landscape zone, the region of flat valley lands that extends from the Sacramento/San Joaquin delta, south to Bakersfield. In the vicinity of the project, the flat valley lands are generally divided into large fields used for field crops, row crops, and in some cases, grazing, orchards, and vineyards. Because of this agricultural pattern, the landscape has an open appearance. In this area, windrows of trees along the edges of agricultural parcels are relatively uncommon. The openness of the landscape is punctuated primarily by small communities like San Joaquin, and clusters of trees around farm dwellings. In the project area, the flat valley lands appear to extend to the horizon to the east and south. In views toward the west and southwest, the ridgeline of the Coastal Range is sometimes visible in the far distance. In views toward the north, industrial structures and trees located along the southern fringes of the developed portions of the City of San Joaquin are visible in the middleground.

The project area landscape is highly engineered in that its use for intensive agricultural production has been made possible by land clearing and leveling and development of drainage channels, irrigation canals, roads, railroad lines, and electric power facilities. The infrastructure facilities that support the landscape's agricultural use are highly visible components of the landscape pattern. In the area in the near vicinity of the energy center site for example, a set of Union Pacific Railroad tracks located on an elevated berm is visible adjacent to the site, an irrigation canal passes along the site's southern edge, a 70-kV power line carried on wooden poles passes through the center of the site, and the PG&E Helm Substation and a set of 230-kV transmission lines are located approximately 0.25 mile to the south of the site. The project area landscape can be characterized as the transition area between the larger agricultural landscape and a small agricultural community. This landscape is not in any way unique in the San Joaquin Valley context and has not been singled out as containing special scenic resources. The Fresno County and City of San Joaquin General Plans, for example, do not designate any scenic highways in this area.

8.11.3.1.2 Planning and Development Context

The planning policies that pertain to the project area are described in detail in Section 8.4, Land Use. The Fresno County General Plan designates the unincorporated lands to the east, south, and southwest of the project site as areas dedicated to large parcel commercial agriculture.

Under the City of San Joaquin General Plan, the land that lies between the western edge of the project site and Colusa Avenue, from the Cherry Lane alignment north to Manning Avenue, is designated for industrial use. The northern and western portions of this area have already been developed with several small complexes of one-and-one-half-story pitched-roof, steel-clad industrial structures. The City is now in the process of purchasing the lands to the south of this area (the parcel bounded by the project site on the east, the Cherry Lane alignment on the north, Colusa Avenue on the west, and Springfield Avenue on the south) (Hami, 2001). The City's General Plan designates this property as a manufacturing reserve area, and the City's intention in purchasing this property is to develop it for industrial use. The City's current thinking is to construct a stormwater retention pond in a portion of the area, and to subdivide the rest of it for industrial development. (Hami, 2001). The land to the west of Colusa Avenue that extends from Springfield Avenue north to the southern limits of the City of San Joaquin is designated as a residential reserve area in the San Joaquin General Plan. However, given the City's purchase of the lands at the southeast corner of Springfield Avenue and Colusa

Avenue and its plans to develop these lands for industrial use, there is now interest in developing the lands west of Colusa Avenue in the area that extends north from Springfield Avenue to the Cherry Lane alignment as an industrial area (Hami, 2001). The triangle of unincorporated land defined by Colorado, Placer, and Manning avenues that lies to the north of the project site is designated as a commercial reserve area in the City of San Joaquin's General Plan.

Based on adopted plans and policies, what is known about the City of San Joaquin's plans for the development of the lands it is purchasing at Springfield and Colusa, and potential plans for the development of the lands west of Colusa, it appears that the landscape to the south, southeast, and south of the project site will remain generally unchanged in the foreseeable future, while the now-open lands to the west of the project site have the potential to develop over time with additional industrial uses.

8.11.3.2 Project Site

8.11.3.2.1 Generating Facility

The site that will be used for CVEC is a triangle-shaped 85-acre parcel of flat valley land that is bounded on the east by Colorado Avenue and a set of railroad tracks owned by the Union Pacific Railroad, on the south by an irrigation canal and by Springfield Avenue, and on the west by open agricultural lands and by the partially developed industrial park that lies north of the Cherry Lane alignment. The short northern boundary line that squares off the northern corner of the site borders an area used for industrial and outdoor storage uses.

At present, the project site is open, and is used for irrigated row crops. The only structures on the site consist of wood poles that carry a 70-kV subtransmission line that passes north-south through the center of the site. Figure 8.11-3a provides a view looking northwest across the site from the intersection of Colorado and Springfield Avenues and Figure 8.11-5a provides a view looking southwest across the site from the intersection of Colorado Avenue with Manning Avenue. As review of these photographs suggests, the site does not contain any features that would be considered to be scenic resources.

8.11.3.2.2 Transmission Line Route

The switchyard that will be developed adjacent to the generating facility as part of the project will be looped to nearby existing transmission lines connecting to the Helm Substation by the addition of two new 0.5-mile-long, 230-kV double-circuit transmission lines on parallel tower structures that will follow the alignment described in Section 5.0 and indicated on Figure 2.1-1. These transmission lines will cross Springfield Avenue at a right angle, and will travel due south across an open agricultural field used for irrigated row crops. The area that will be traversed by the transmission line can be seen to the left of the substation visible in the middleground of Figure 8.11-5a.

8.11.3.2.3 Natural Gas Line Route

The route that will be used for the natural gas line that will be developed to supply the project is described in Sections 2.0 and 6.0 and is indicated on Figure 2.1-1. This natural gas line route will begin at the existing PG&E gas line located near Interstate 5, approximately 17 miles southeast of the project site. The route of the buried natural gas line is located within the rights-of-way of West Mountain View, South Washoe, West Manning, South El Dorado, and West Springfield avenues, which it follows to the project site. The area through which this approximately 20-mile long pipeline route passes is a flat, open landscape of large parcels devoted to irrigated agriculture.

8.11.3.2.4 Water Line

The alternative routes being considered for the supply of reclaimed wastewater to the project are indicated on Figure 7.1-3. All alternatives begin at the area occupied by the 2,000 acres of settling ponds that are a part of the Fresno-Clovis Waste Water Treatment Facility (WWTF), which is located

southwest of the City of Fresno, and approximately 17 miles northeast of the project site. From the WWTF settling ponds, the routes follow road rights-of-way for a distance of approximately 21 miles until reaching the project site. The area through which the reclaimed water pipeline route passes is a flat landscape devoted to large-parcel irrigated agriculture. The landscape in this area is somewhat less open than the landscape in the western portion of the valley where the gas line will be located because in the area between San Joaquin and Fresno, more of the parcels have been planted with vineyards and orchards than is the case in the area to the west of San Joaquin.

8.11.3.3 Project Site Visibility

Figure 8.11-1 provides a generalized indication of the project viewshed, that is, the areas from which the proposed generating facility and transmission line would likely be visible. Because the gas and water supply lines would be entirely underground and thus not visible, they were not a consideration in the creation of this figure.

The project's viewshed was identified from engineering drawings, visual simulations of the project's appearance from representative viewpoints, study of topographic maps and air photos, and extensive field observations. The viewshed indicated on Figure 8.11-1 is generalized in that there are areas in the boundaries of the potential viewshed where views toward the generating facility might be blocked by structures, trees, vineyards, shrubs, tall crops, or other features in the viewer's immediate foreground. In much of the nearby City of San Joaquin, only the tops of the project's tallest features will be visible, and from many areas, the project will not be visible at all.

The viewshed map presented in Figure 8.11-1 has been drawn to indicate that the energy center will be partially to fully obscured in views from much of the City of San Joaquin and from the areas to the northeast, from which views toward the energy center would be partially to fully screened by the City's trees and structures. In areas of the valley where there are open views toward the site, the proposed energy center has the potential to be visible over long distances.

The boundaries of the area of potential visibility were set at 3 miles from the site. This distance was selected because elements of a view that are 3 miles or more away are considered to be a part of the background, the landscape zone in which little color or texture is apparent, colors blur into values of blue or gray, and individual visual impacts become least apparent (USDA, 1973).

In addition, observations made in the area around the Sutter Power Plant (a combined-cycle electric generating facility located in a flat, Central Valley agricultural setting) indicate that after about 2.5 miles, the facility's details become blurred; and because the facility becomes a relatively small element in the overall landscape and is seen low on the horizon, it has limited visual salience.

8.11.3.4 Sensitive Viewing Areas and Key Observation Points

To structure the analysis of the project effects on visual resources, an evaluation was made of the view areas most sensitive to the project's potential visual impacts, and based on that assessment, four Key Observation Points (KOPs) were selected for detailed analysis.

Before being finalized, these four KOPs were presented to the San Joaquin City Manager for review, and confirmation that they represent the best locations for understanding the project's visual consequences for potentially sensitive viewers. For each of the KOPs, photo simulations were developed as a basis for visualizing the plant's potential effects.

In evaluating the sensitivity of the viewing areas potentially affected by the project, consideration was given to distance from the project site, numbers of viewers, and the presence of residential or recreational uses. The locations of the KOPs are indicated on Figure 8.11-2, and the viewing conditions at each of the KOPs are evaluated below. All of the areas selected as KOPs lie within

0.70 mile of the project site and are thus areas in which project features would be visible in the foreground or near middleground.

No viewpoints at a greater distance from the site were selected as KOPs because no areas within more distant portions of the viewshed were found where there would be concentrations of sensitive viewers with views of landscapes of high visual quality in which the presence of the energy center would have the potential to create substantial adverse aesthetic impacts.

To respond to the CEC's requirement that an assessment be made of the visual quality of the landscapes potentially affected by the project, the discussion of the views seen from the KOPs includes ratings of the visual quality of the landscapes that they represent. These ratings were developed according to a series of in-field observations carried out during the period from February through July, 2001, review of photos of the affected area, review of methods for assessment of visual quality, and review of research on public perception of the environment and scenic beauty ratings of landscape scenes.

The final assessment of the visual quality of the views from each of the KOPs was made on the basis of professional judgment that took a broad spectrum of landscape assessment factors into consideration. The factors considered included evaluation of the following:

- Natural features, including topography, water courses, rock outcrops, and natural vegetation
- Positive and negative effects of man-made alterations and built structures on visual quality
- Visual composition, including assessment of the complexity and vividness of patterns in the landscape
- Spatial organization, including assessment of criteria such as perceived accessibility, mystery, enclosure, scale, image, refuge, prospect, and contemplation

The relevance of these dimensions for landscape evaluation has been established by landscape perception and assessment research that has taken place over the past 30 years.[1] The final landscape quality ratings developed based on these considerations were expressed in terms of the six landscape quality classes listed in Table 8.11-5. This rating system is based on the scale developed for use with an artificial intelligence system for evaluation of landscape visual quality developed by a group of landscape scholars at Virginia Tech (Buhyoff et al., 1994). This scale provides a robust framework for qualitative ratings because it is based on the findings of the full range of available research on the ways in which the public evaluates visual quality. In addition, the scale has a common-sense quality and is readily understandable. It defines landscape quality in relative terms, contrasting landscapes that are average in visual quality with those that are above and below average, and those that are at the top and bottom of the landscape quality spectrum.

[1] Research literature that defines these dimensions and documents the role that they play in the perception of landscape quality includes Amadeo, Pitt, and Zube, 1989; Kaplan, S. 1979; Kaplan, R.1985; Kaplan and Kaplan, 1982; Ribe, 1989; and Shafer, et al. 1969.

TABLE 8.11-5
Landscape Visual Quality Scale Used in Rating the Areas Potentially Affected by CVEC

Rating	Explanation
Outstanding Visual Quality	A rating reserved for landscapes with exceptionally high visual quality. These landscapes will be significant regionally and/or nationally. They usually contain exceptional natural or cultural features that contribute to this rating. They will be what we think of as "picture post card" landscapes. People will be attracted to these landscapes to be able to view them.
High Visual Quality	Landscapes that have high quality scenic value. This may be due to cultural or natural features contained in the landscape or to the arrangement of spaces contained in the landscape that causes the landscape to be visually interesting or a particularly comfortable place for people. These are often landscapes which have high potential for recreational activities or in which the visual experience is important.
Moderately High Visual Quality	Landscapes which have above average scenic value but are not of high scenic value. The scenic value of these landscapes may be due to man-made or natural features contained in the landscape, to the arrangement of spaces, in the landscape, or to the two-dimensional attributes of the landscape.
Moderate Visual Quality	Landscapes which have average scenic value. They usually lack significant man-made or natural features. Their scenic value is primarily a result of the arrangement of spaces contained in the landscape and the two-dimensional visual attributes of the landscape.
Moderately Low Visual Quality	Landscapes that have below average scenic value but not low scenic value. They may contain visually discordant man-made alterations, but the landscape is not dominated by these features. They often lack spaces that people will perceive as inviting and provide little interest in terms of two-dimensional visual attributes of the landscape.
Low Visual Quality	Landscapes with low scenic value. The landscape is often dominated by visually discordant man-made alterations; or they are landscapes that do not include places that people will find inviting and lack interest in terms of two-dimensional visual attributes.

Rating scale based on Buhyoff et al., 1994.

8.11.3.4.1 KOP 1—Colorado Avenue at Springfield Avenue

Figure 8.11-3a depicts the view from KOP 1. This viewpoint was selected to represent views toward the project site from the northbound lane of Colorado Avenue and from the westbound lane of Springfield Avenue in the area to the east of Colorado Avenue. This viewpoint lies approximately 0.70 mile from the southern edge of the developed portion of the City of San Joaquin, and 0.23 mile south of the location of the switching station, the project's closest developed feature. This view lies at the outer edge of the cone of vision of drivers traveling north on Colorado Avenue, but would be well within the cone of vision of westbound travelers using the portion of Springfield Avenue east of Colorado.

Colorado Avenue is a two-lane road that provides access to the City of San Joaquin from the agricultural area to the south. The precise level of traffic on Colorado Avenue in the area south of the City of San Joaquin is not known. However, as indicated in Section 8.10.3.1, it was estimated that the portion of Colorado Avenue, east of El Dorado Avenue in the City of San Joaquin had an estimated average daily traffic (ADT) level of 2,295 vehicles per day in the year 2000. Given this figure and observations of traffic patterns in the area, it is reasonable to assume that traffic levels on Colorado Avenue in the vicinity of Springfield Avenue are on the order of approximately 3,000 vehicles per day.

Average daily traffic data for Springfield Avenue are not available, but based on field observations it would appear that traffic levels on Springfield in the vicinity of the project site are low. Neither Colorado Avenue nor Springfield Avenue has been designated in local plans as a scenic route or deserving of special design treatment.

Because the traffic levels on these roads is relatively low, much of the traffic appears to be work-related, and traffic speeds on Colorado appear to be high, the sensitivity of views from this KOP is low to moderately low.

The major elements in the existing view include the roadway; the railroad berm and railroad track; the irrigation canal along Springfield Avenue; the flat, open agricultural field that occupies the foreground and middleground area to the west of the railroad berm; the wood pole subtransmission towers that cross the project site; and in the far middleground, the low industrial buildings, houses, and trees that define the southern edge of the City of San Joaquin. On clear days, the ridgeline of the Coastal Range hills can be seen low on the horizon in the far background. Applying the Buhyoff landscape visual quality scale, the view from this area can be classified as having moderately low visual quality. Although the presence of the low ridgeline that is sometimes visible in the background provides an element of visual interest, the view's foreground and middleground provide limited visual interest, and the bare roadside and railroad berm along the west side of Colorado create a large area of visual discordance in the immediate foreground.

8.11.3.4.2 KOP 2—Colusa Avenue North of Springfield Avenue

Figure 8.11-4a represents the view from KOP 2, a viewpoint located along Colusa Avenue at a point slightly north of the intersection with Springfield Avenue. This viewpoint is approximately 0.25 mile west of the project site's western boundary and 0.42 mile west of the proposed locations of the closest project structures. This viewpoint was selected to represent views toward the project site as experienced by travelers on Colusa and Springfield Avenues in this area, and by the occupants of the two rural residences located on the west side of Colusa Avenue north of Springfield.

Average daily traffic data for Colusa and Springfield avenues is not available, but based on field observations it would appear that traffic levels on these two roads are low in this area. Because the view presented in Figure 8.11-4a was taken at an angle of 90° from the centerline of Colusa Avenue, it is not the view that would appear in the cone of vision of travelers using this road. From this portion of Colusa Avenue, the project site would not appear within the primary cone of vision of either northbound or southbound drivers. It would, however, appear within the cone of vision of eastbound travelers on Springfield Avenue. This view can be seen only in the area east of Colusa, because west of Colusa, views from Springfield Avenue toward the project site are screened by the large trees around the residences at the northwest corner of Springfield and Colusa. The view presented in Figure 8.11-4a specifically depicts the view due east that would be seen from the front of one of the rural residences. Because the area in front of this residence is now open, this residence currently has an unobstructed view toward the project site that is like the view seen in Figure 8.11-4a. The area in front of the other residence includes a number of large trees, which appear to screen much of the view toward the project site from the house and the front yard area. Although this view is a residential view, because it is fully visible from only one residence, and because it is visible within the cone of vision of a relatively small number of eastbound travelers on Springfield Avenue, the sensitivity of this viewpoint is moderately low.

The primary element in the existing view is the open, flat agricultural field in the foreground that extends to the horizon. Other view elements include the tall lattice steel transmission towers seen at the right edge of the view, the line of wood pole transmission towers that passes through the view's middleground, and the clusters of trees on the horizon line that surround scattered rural residences.

Given this view's lack of topographic variation and other elements of potential visual interest, and given the presence of power lines that detract to a small degree from its visual intactness, applying the Buhyoff scale, the view from this area can be classified as having a moderately low level of visual quality.

8.11.3.4.3 KOP 3—Colorado Avenue at Manning Avenue

Figure 8.11-5a represents the view from KOP 3, a viewpoint located at the intersection of Colorado Avenue with Manning Avenue. This viewpoint is located less than 0.10 mile north of the project site's northern boundary, but 0.35 mile north of the proposed energy center's closest structures. This viewpoint was selected to represent views toward the project site seen by southbound travelers on Colorado Avenue in the vicinity of Manning Avenue, views of westbound travelers on Manning Avenue making the southbound turn onto Colorado, and views of people patronizing the San Joaquin shopping center located at the northeast corner of Manning and Colorado.

The physical characteristics and traffic volumes carried by Manning and Colorado Avenues are documented in Section 8.10.3.1 of the transportation chapter. As Section 8.10.3.1 indicates, Colorado Avenue east of El Dorado in Central San Joaquin had an estimated ADT of 2,295 vehicles in 2000, and Manning Avenue west of Yuba Avenue had a 2000 estimated ADT of 1,935 vehicles. The view represented by Figure 8.11-5a is not seen by travelers as they drive south through San Joaquin. In the area along Colorado Avenue to the north of this KOP, views toward the project site are obstructed by the long warehouse building located between the railroad tracks and Colorado Avenue. It is only when motorists pass the warehouse building and the commercial establishment to the south of it that the view opens up and the view represented by this KOP becomes visible.

The relatively new shopping center located at the northeastern corner of Manning and Colorado consists of a small cluster of commercial buildings with a landscaped parking lot in front. Tenants in the shopping center include a bank, two restaurants, a bakery, hair studio, and several additional small retail establishments. The view represented by Figure 8.11-5a is visible from the shopping center's parking lot and from the parking lot's exit onto Manning Avenue.

This view toward the project site is the one that is seen by the highest numbers of people in the community of San Joaquin. Although it is seen by more people than views from any other area, the overall level of visual sensitivity is moderately low because this viewing location includes no residences, parks, or other highly sensitive view receptors.

The major elements in the existing view include the paved roadways and intersection; the railroad berm and the disturbed area lying between it and the roadway; the flat, open agricultural fields that extend to the horizon; the tall lattice steel structures in PG&E's Helm Substation visible in the middleground; and the lines of lattice steel and wood pole subtransmission towers that travel across the view's middleground area.

Given this view's lack of topographic variation and other elements of potential visual interest, and given the visual salience of the roadway, the disturbed area between it and the railroad berm, and the substation and transmission towers, applying the Buhyoff scale, the view from this area can be classified as having a low level of visual quality.

8.11.3.4.4 KOP 4—Idaho Street at 9th Street

Figure 8.11-6a represents the view from KOP 4, a viewpoint located at the intersection of Idaho Street with 9th Street in the City of San Joaquin. This viewpoint lies approximately 0.44 mile northwest of the project site and 0.72 mile northwest of the proposed energy center's closest structures. This KOP was selected to represent views toward the project site from residential neighborhoods in the southern portion of San Joaquin where there is some potential for views of project facilities. Within the residential areas in the southern half or the community, there are several hundred homes. From most of these homes and their yards, views toward the project site are blocked by nearby structures and vegetation. However, in some cases, the view corridors created by streets, particularly those in the southwestern quadrant of the community that are oriented in a northwest to southeast direction create the potential for views toward the project's

taller features. The view presented in Figure 8.11-6a is typical of the views toward the site down the view corridors created by these northwest/southeast trending streets.

The area beyond the low industrial building that terminates the vista down this street is where the project site is located. As this photo suggests, although the air space above the project site is visible in the vista down the middle of the street, it would not be visible from the homes and their front and rear yards because of the view blockage created by structures and trees. Although views toward the project site would not generally be visible from homes and yards, they would be visible to people as they use the streets in their residential neighborhoods, and for this reason, these views have moderately high level of sensitivity.

The major elements in the view from this KOP are the street and parked cars, the sidewalks and street trees, front yards and residences, utility wires, and streetlights mounted on tall structures. At the end of the street, a one-story industrial structure is visible. In general, this street scene, and the scenes on the streets parallel to it have an orderly and human-scaled appearance. Applying the Buhyoff landscape visual quality scale, the view from this KOP would be classified as having moderate visual quality.

8.11.4 Environmental Consequences

8.11.4.1 Analysis Procedure

This analysis of the visual effects of changes that might be brought about by CVEC project is based on field observations and review of the following information: local planning documents, project maps and drawings, photographs of the project area, computer-generated visual simulations from each of the KOPs, and research on design measures for integrating electric facilities into their environmental settings.

Site reconnaissance was conducted to view the site and surrounding area, to identify potential key observation points, and to take representative photographs of existing visual conditions. A single-lens reflex (SLR) 35-mm camera with a 50-mm lens (view angle 40 degrees) mounted on a tripod was used to shoot site photographs.

Page-size photographs are presented to represent the "before" conditions from each KOP. Visual simulations were produced to illustrate the "after" visual conditions from each of these points, which provides the viewer with a clear image of the location, scale, and visual appearance of the proposed project. For each KOP, an "after" image was prepared. This simulation image represents the project's appearance in the period immediately after completion of construction and installation of the landscaping. For KOP 1, a second image was prepared that represents the project's appearance after 20 years, by which time the landscaping should have achieved a reasonable level of maturity.[2] The computer-generated simulations are the result of an objective analytical and computer modeling process described briefly below. The images are accurate within the constraints of the available site and project data.

Computer modeling and rendering techniques were used to produce the simulated images of the views of the site as they would appear after development of the project. Existing topographic and site data provided the basis for developing an initial digital model. The project engineers provided site plans and digital data for the proposed generation facility, and site plans and elevations for the components of the transmission system. These were used to create three-dimensional (3-D) digital

[2] The trees specified in the planting plan are long-lived species that tend to grow very rapidly in their early stages. Although the trees will continue to grow after 20 years, their growth will be at a slower rate than in the years during the first two decades after planting. Because power plants like the CVEC have an expected life span of approximately 30 years, the 20-year time horizon constitutes a reasonable point for gauging the appearance of the project during its last decade of likely service.

models of these facilities. These models were combined with the digital site model to produce a complete computer model of the generating facility and portions of the overhead transmission system.

For each viewpoint, viewer location was digitized from topographic maps and scaled aerial photos, using 5 feet as the assumed eye level. Computer "wire frame" perspective plots were then overlaid on the photographs of the views from the KOPs to verify scale and viewpoint location. Digital visual simulation images were produced as a next step based on computer renderings of the 3-D model combined with high-resolution digital versions of base photographs. The final "hardcopy" visual simulation images that appear in this AFC document were produced from the digital image files using a color printer.

8.11.4.2 Impact Evaluation Criteria

Analysis of the project's impacts was based on evaluation of the changes to the existing visual resources that would result from construction and operation of CVEC. An important aspect of this analysis was evaluation of the "after" views provided by the computer-generated visual simulations, and their comparison to the existing visual environment. In making a determination of the extent and implications of the visual changes, consideration was given to:

- The specific changes in the affected visual environment's composition, character, and any specially valued qualities
- The affected visual environment's context
- The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration
- The numbers of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the likely changes

Significance criteria for impacts to aesthetic resources were developed from CEQA guidelines and the CEQA Checklist to evaluate the potential environmental impacts to the project, the following criteria were applied:

- Would the project have a substantial adverse effect on a scenic vista?
- Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
- Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

8.11.4.3 Project Appearance—Proposed Project

8.11.4.3.1 Generating Facility

The features of the proposed nominal 1,060-MW natural gas-fired combined-cycle generating facility are described in detail in Chapter 2.0, Project Description. Figure 2.2-1 is a plan that indicates the layout of the proposed project features on the site. Figure 2.2.2 provides typical elevation views. Table 8.11-6 summarizes the dimensions of the generating facility's major features.

An 8-foot non-reflective chain link fence, with an additional 2 feet of barbed or razor wire, will surround the generating facility and switchyard.

TABLE 8.11-6
Dimensions of CVEC Generating Facility's Major Features

Feature	Height (feet)	Length (feet)	Width (feet)	Diameter (feet)
HRSG Units				
HRSG casings	73	150	60	
To platform	93			
To top of highest drums	93			
To top of top works support steel	106			
To top of highest relief valves and vent silencers	92			
HRSG stacks	145			20
Gas Combustion Turbines				
Gas combustion turbines	32	107	30	
Gas turbine air inlet filters	65	60	45	
Steam Turbine Generator				
STG enclosure	47	115	32	
STG pedestal	37	115	32	
Auxiliary Boiler				
Boiler	25	35	22	
Stack	120			3.5
Pipe Rack				
Rack	50	395 (Longest Section)	26	
Platform	68			
Cooling Tower (6 cells)		769	69	35
To top of deck	45			(each cell)
To top of fan shrouds (cones)	59			
Cooling Tower Chemical Feed Building	12			
Brine Concentrator	90			20
Tanks				
Raw Water Tanks	40			80
Demineralized Water Storage Tanks	30			36
Service Water Tank	30			36
Wastewater Tank	30			36
Administration/Maintenance Building	40	152	90	
Water Treatment Building	26	230	150	
Fire Pump House	20			
Switchyard		300	256	
Switchyard Bus Structures	32			
Conductor Take-Off Structures	56			
Stormwater Retention Pond		530	360	
Gas compressor structure		60	55	
Gas metering station		200	200	

8.11.4.3.2 Construction Lay Down Area

As detailed in Section 2.2.15, construction of the project from site preparation and grading to commercial operation is expected to take place from third quarter 2002 to third quarter 2004 (24 months, up to 27 months). During the construction period, parking for construction workers and laydown of equipment will take place on a 20-acre portion of the project property located to the north of the area on which the project facilities will be built.

8.11.4.3.3 Landscaping

A preliminary conceptual landscape plan (Figure 8.11-7) has been developed that is reflected in the visual simulations of the views of the project from each of the KOPs. The plan includes use of fast-growing evergreen species to ensure rapid achievement of year-round visual screening and view enhancement. The very tall, fast-growing species that have been specified for the perimeters of the project site will maximize the screening of the views from immediately surrounding roads and from more distant viewpoints. The development of this landscape plan was informed, in part, by observations of the long-established roadside plantings along the rural roads in the vicinity of Kearny Park west of Fresno.

The planting plan entails planting of informal clusters of tall, fast-growing eucalyptus trees mixed with slower growing valley oaks along the project site's eastern boundary next to the Union Pacific Railroad right-of-way. Along the project site's southern perimeter along the Springfield Avenue frontage, clusters of valley oaks will be planted. In addition, groupings of tall, fast-growing eucalyptus will be planted along the site's western lot line to screen views toward the energy center from the two rural residences at the corner of Springfield and Colusa avenues and to screen views toward the project facilities from the view corridors created by northwest/southeast trending streets in San Joaquin's southwestern neighborhoods. At the southeastern corner of the site, the dense screening landscaping will be set back from the corner to maintain driver sight lines at the intersection of Colorado and Springfield avenues. At the corner, a grove of palm trees will be planted. The palm trees will maintain visibility at the intersection and will create a visual accent that will also mark the new southern boundary of the City of San Joaquin. A line of olive trees planted in a curving row will define the northern boundary of the grove of palm trees. The olive trees will create a dense hedge that will screen views toward the project from the intersection and their contrasting color and form will serve as a visual counterpoint to the grove of palm trees and the and nearby groupings of eucalyptus and oak trees.

8.11.4.3.4 Lighting

CVEC will require nighttime lighting for operational safety and security. To reduce any offsite impacts of this requirement, lighting at the facility will be restricted to areas required for safety, security, and operation. Exterior lights will be hooded, and lights will be directed onsite so that significant light or glare will not be created. Fixtures of a non-glare type will be specified. For areas where lighting is not required for normal operation, safety, or security, switched lighting circuits will be provided, thus allowing these areas to remain unilluminated at most times, minimizing the amount of lighting potentially visible offsite.

Because of the project's accelerated construction schedule, some of the construction activity will take place at night, which will require illumination that meets county, state, and federal worker safety regulations. To the extent possible, the nighttime construction lighting will be erected pointing towards the center of the construction site and will be shielded. Task-specific construction lighting will be used to the extent practical while complying with worker safety regulations.

8.11.4.3.5 Water Vapor Plumes

At times when temperatures are low and humidity is high, the project's 16-cell cooling tower will create visible water vapor plumes. The analyses that have been done for the East Altamont Energy

Center, a power plant that is similar in size and design to CVEC and which is located in an area where meteorological conditions are generally similar to those at the CVEC site, provide a good sense of the nature and frequency of the visible plumes likely to be created by the CVEC's cooling towers.[3] At the East Altamont Energy Center, it is predicted that the cooling tower would produce visible plumes during a total of from about 200 to 560 hours per year, with most of the plume formation occurring during nighttime hours. During daylight hours, the analysis found that cooling tower plumes would be visible for a total of 165 to 216 hours per year. The average height of the cooling tower plumes predicted at East Altamont is approximately 60 to 75 meters, and the maximum plume height is predicted to be on the order of 300 to 700 meters.

The HRSG stacks will also produce visible plumes at times when temperatures are low and humidity is high. The analyses done for the East Altamont Energy Center predict that the HRSG stacks for that project will create visible plumes during a total of from 1,300 to 1,900 hours a year, with most of the plume formation occurring during nighttime hours. During daylight hours, the analysis predicts that HRSG plumes would be visible for a total of approximately 500 to 800 hours per year. The average height of the HRSG plumes predicted at East Altamont is 116 to 137 meters, and the maximum plume height is predicted to be on the order of 800 meters.

8.11.4.3.6 Transmission System

The switchyard that will be developed adjacent to the generating facility as part of the project will be looped to nearby existing transmission lines connecting to the Helm Substation by the addition of two new 0.5-mile-long, 230-kV double-circuit transmission lines on parallel tower structures that will follow the alignment described in Section 5.0 and indicated on Figure 2.1-1. These transmission lines will cross Springfield Avenue at a right angle, and will travel due south across an open agricultural field used for irrigated row crops. The area that will be traversed by the transmission line can be seen to the left of the substation visible in the middleground of Figure 8.11-5a. Figure 5.1-1 indicates the route that the new transmission interconnection would follow, and Figures 5.2-4 through 5.2-8 are elevations that depict the appearance and dimensions of the transmission structures that will be used. All of the structures will be monopole tubular steel towers (see Figures 5.2-4 through 5.2-8). The typical heights range from 105 to 110 feet.

The new transmission structures will have a neutral gray finish that will be harmonious with the colors of the generating facility buildings and transmission structures, and that will help them fade into the backdrop.

Non-specular conductors will be used to reduce their visibility. Non-reflective and non-refractive insulators have also been specified. During construction, the appearance of the area along the right-of-way will be temporarily disrupted by the presence of construction equipment, pole sections, cables, and other disturbances associated with transmission line construction. However, because these effects will be minor and short in duration, they will not be the source of a significant visual impact.

The 70-kV subtransmission line that now passes north-south through the site will be rerouted around the east side of the project site and will rejoin its original alignment at the intersection of Springfield and Placer Avenues.

8.11.4.3.7 Pipelines

The design features of the natural gas and water supply pipelines that would be built to serve the proposed project are described in Sections 6.0 and 7.0. The locations of these pipelines are indicated on Figure 2.1-1**.** Except for the gas metering station, which is described below, the gas line would be entirely buried. Although the water supply pipeline would also be buried, at occasional locations

[3] These analyses were filed with the CEC as East Altamont Energy Center Data Request and Response Set #1 (01-AFC-4) on July 9, 2001.

along its 20-mile length from the Fresno-Clovis Waste Water Treatment Facility to the plant site, air release valves would be required. Depending upon local drainage conditions, these valves would be housed either in vaults that are flush with the ground or in 2-foot by 3-foot rectangular surface vaults that extend up to 2 feet in height. Because the gas and water supply pipelines would be generally buried, any above-ground air release valve vaults would be small and consistent with the appearance of irrigation-related features already a part of the landscape, and because the surface conditions would be restored, the pipelines would not be the source of substantial long-term changes to the visual environment.

As a part of the gas line, there will be a gas metering station at the interconnection with the PG&E gas pipeline (see Figure 6.1-1 for location). The metering station will consist of several aboveground pipeline segments and valves and a small structure for controls. Because the structure will be small, the pipe segments will be low (extending no more than about 6 feet above the ground), and all major components can be painted neutral, earth-tone colors, the visual salience and potential for adverse visual impacts will be low.

Any noticeable visual effects associated with the pipelines would be restricted to the construction phase. During construction, the area along the rights-of-way would be temporarily disrupted by machinery, excavated piles of dirt, construction vehicles, and other disturbances associated with pipeline construction. However, these effects would be minor and temporary, and would not be significant.

8.11.4.4 Assessment of Visual Effects

8.11.4.4.1 KOP 1—Colorado Avenue at Springfield Avenue

Figure 8.11-3b is a simulated view of the project as it would appear from KOP 1 at the time it goes into operation, and Figure 8.11-3c is the same view as it would appear 20 years after construction and reflects the appearance of the project landscaping at a point when it is nearing maturity.

As Figure 8.11-3b indicates, in the period immediately after construction, before the tree plantings have achieved much height, the plant's air intake units, HRSG units, HRSG stacks, steam turbine generator, cooling tower, and transmission towers will all be clearly visible from this viewpoint, and will become important elements in the far foreground of the view. Since the time the simulation was prepared, the height of the auxiliary boiler stack has been increased from 100 feet to 120 feet. This feature is visible in Figure 8.11-3b as a thin pole-like structure located just to the right of the first HRSG on the left. With the 20-foot addition to its height, the stack will appear to extend slightly further above the air intake units adjacent to it. Because of the stack's very small diameter and because it is seen in the context of the taller-appearing transmission towers and HRSG stacks, the increase in its height will have relatively little effect on its implications for the project's overall appearance and potential for visual impact. Because the palm trees that will be planted along the southeast corner of the site will be 25 feet tall at the time they are planted, they will provide a small measure of screening of views toward the HRSGs and air inlet filters.

The project will change the existing view in that it will fill the view's far foreground, blocking the existing view across the open agricultural fields and toward the industrial structures and the line of homes and trees now visible at the southern edge of San Joaquin the far middleground. In addition, the views toward the distant ridgeline that can now be seen on clear days will be substantially blocked. The generating facility's features will be larger and bulkier than the existing features in the view, and will become the view's most visually important elements. All of the project's taller elements will be silhouetted against the sky, which will increase their visual salience.

Figure 8.11-3c illustrates how the appearance of the project will change over time as the planned landscaping becomes established and gains height and mass. As this simulation indicates, at 20 years

after construction, the trees around the project will have grown to the point where all of the project's components except for the tops of the transmission towers closest to Springfield Avenue will be screened from view.

The development of the project will change this view in that it will add a number of large industrial forms into a landscape that is now more open and less intensively developed in character. Although the character of this scene will be changed a large degree, the overall visual quality of this view, which is now moderately low will not be decreased. The significant tree plantings around the site's perimeter are composed of fast-growing species that will quickly provide some measure of screening for the project's lower elements, and over time, this screening will become nearly complete. In this open, somewhat treeless landscape, the project's dense tree plantings will create an area of visual contrast that could be considered to be a positive addition to the area's landscape. In addition, the composition of palm and olive trees planted at the intersection of Colorado and Springfield avenues will become a new landmark in the area's landscape.

In light of the low to moderately low visual sensitivity of this view and the fact that its overall visual quality, which is now moderately low, will not be substantially decreased, the project's impact on this view will be less than significant.

8.11.4.4.2 KOP 2—Colusa Avenue North of Springfield Avenue

Figure 8.11-4b is a simulated view of the project as it would appear from KOP 2 at the time it goes into operation. As Figure 8.11-4b indicates, in the period immediately after construction, before the planned landscaping has achieved much height, the plant's stacks, HRSG units, air intake units, cooling tower, water storage tanks, switchyard, and transmission towers will all be clearly visible from this viewpoint, and will become important elements in the middleground of the view.

The project will change the existing view in that it will occupy about half of the horizon line in the view's near middleground. The project's features will be taller and bulkier than the transmission towers now visible in the view and will block a portion of the view toward the open sky. All of the project's taller elements will be silhouetted against the sky, which will increase their visual salience.

Over time, as the planned landscaping becomes established and gains height and mass, the trees around the project will grow to the point where nearly all of the project's components except for the tops of the stacks and several of the transmission towers will be screened from view. Since the time the simulation was prepared, the height of the auxiliary boiler stack has been increased from 100 feet to 120 feet. This feature is visible in Figure 8.11-4b as a thin pole-like structure located just to the right of the second air intake filter on the left. With the 20-foot addition to its height, the stack will appear to extend slightly further above the air intake units adjacent to it. Because of the stack's very small diameter and because it is seen in the context of the taller-appearing HRSG stacks, the increase in its height will have relatively little effect on its implications for the project's overall appearance and potential for visual impact.

The development of the project will change this view in that it will add a number of large industrial forms into the middleground zone of landscape that is now more open and less intensively developed in character. Although the character of this scene will be changed a large degree, the overall visual quality of this view, which is now moderately low will not be decreased. The tree row that will be planted along the project site's western boundary line is composed of fast-growing species that will quickly provide some measure of screening for the project's lower elements, and over time, this screening will become nearly complete.

The City of San Joaquin's impending purchase of the 40-acre parcel that lies between this viewpoint and the project site provides additional opportunities for reduction of the project's visibility from this viewpoint. Once the City's purchase of this property is complete, the Applicant could collaborate

with the City to establish ornamental plantings along the western edge of the property. These plantings would provide almost immediate screening of views toward the energy center from the two residences along Colusa Avenue just north of Springfield Avenue.

As indicated in Section 8.11.3.4, the visual sensitivity of this viewpoint is relatively low. Although the visual character of the view will be changed to some degree, the level of visual quality, which is now moderately low will not be substantially altered. In light of these factors, the project's impact on visual resources will be less than significant.

8.11.4.4.3 KOP 3—Colorado Avenue at Manning Avenue

Figure 8.11-5b is a simulated view of CVEC as it would appear from KOP 3 at the time the project goes into operation. As indicated by Figure 8.11-5b, in the period immediately following construction, before the planned landscaping has had the opportunity to grow to any extent, the plant's warehouse building, water storage tanks, HRSGs, HRSG stacks, air inlet filters, cooling tower, and transmission takeoff tower will all be clearly visible from this viewpoint, and will become important elements in the near middleground of the view. Since the time the simulation was prepared, the height of the auxiliary boiler stack has been increased from 100 feet to 120 feet. This feature is visible in Figure 8.11-5b as a thin pole-like structure located just to the left of the first air intake filter on the left. With the 20-foot addition to its height, the stack will appear to extend slightly further above the air intake unit it is adjacent to. Because of the stack's very small diameter and because it is seen in the context of the taller-appearing HRSG stacks, the increase in its height will have relatively little effect on its implications for the project's overall appearance and potential for visual impact.

The project will change the existing view in that it will fill a large portion of the view's near middleground, blocking the existing views across the open fields and toward the PG&E substation and transmission lines. The project's structures will add substantial built elements into a view that is now developed to a lesser degree. The tops of the switchyard equipment, air intake vents, and HRSGs will all appear to be taller in height than the transmission towers that are already visible in the view. All of the project's taller elements will be silhouetted against the sky, which will increase their visual salience.

Over time, as the planned landscaping becomes established and gains height and mass, the trees around the project will grow to the point where nearly all of the project's components except for the very top of one of the HRSG stacks will be screened from view.

The development of the project will change this view in that it will introduce the large, industrial-appearing forms of the energy center into a landscape that is now relatively open appearing. The presence of the plant will change the character of this scene to some degree, although it is a view which already contains some substantial electric infrastructure facilities. The significant tree plantings along the site's eastern edge include fast-growing species that will quickly provide some measure of screening for the project's lower elements, and over time, the level of project screening from this viewpoint will become nearly entirely complete. In this view, the project and project landscaping will screen the views toward the electric infrastructure facilities that are already major elements in this landscape composition. In addition, in this open, somewhat treeless landscape, the project's dense tree plantings will create an area of visual contrast that could be considered to be a positive feature of the overall landscape pattern.

From an urban design point of view, the tree row that will be established along the western edge of the Colorado Avenue corridor could be thought of as creating a transition zone between the smaller scale and more enclosed visual pattern in the City of San Joaquin and the larger scale and more open agricultural landscape to the south.

As indicated in Section 8.11.3.4, although this viewpoint is the place in the project area from which the energy center would be seen by the largest numbers of people, the overall visual sensitivity of this viewpoint is moderately low because it is not a view from a residential area, park, designated scenic route, or other highly sensitive area. Although the visual character of the view will be changed to some degree, the level of visual quality, which is now low will not be substantially altered. In light of these factors, the project's impact on visual resources will be less than significant.

8.11.4.4.4 KOP 4—Idaho Street at 9th Street

Figure 8.11-6b is a simulated view of the project as it would appear from KOP 4 at the time CVEC is placed into service. As indicted by Figure 8.11-6b, at the time the energy center starts operation, the tops of two of the plant's stacks and the top of one of its HRSG units will become visible in the far middleground at the end of the view corridor created by the unobstructed sight line down the center of Idaho Street. In this view, one of the stacks would be mostly hidden by the trees along the street, but the top portion of the other would be fully visible and silhouetted against the sky. Although the stacks and top of the HRSG unit would be clearly visible, they would not appear to be taller than the trees in the view's near and more distant foreground zones, and would not become dominant elements in the view.

Over time, as the planned landscaping becomes established and gains height and mass, the trees around the project will grow to the extent that the HRSG that will be visible at the time of construction will be entirely screened, and the visibility of the stack will be reduced as well.

The development of the project will add several visible but relatively small-appearing industrial forms into a view that is currently predominantly residential in character. The presence of these features could be thought to degrade the existing residential character of this view to some degree, but the level of change would be relatively minor.

Because this viewpoint represents the view from the center of a street in a residential area, the level of visual sensitivity is moderately high. Because the visual character of the view will be changed to only a very small degree, and because the level of visual quality, which is now moderate will not be substantially altered, the project's impact on visual resources will be less than significant.

8.11.4.4.5 Water-Vapor Plumes

To provide a basis for determining the extent to which the visible water vapor plumes that will be generated by this project's cooling tower and HRSG might create impacts on visual resources, use has been of the plume data that has been generated for the East Altamont Energy Center (EAEC). As indicated in Section 8.11.4.3, this data provides a reasonable idea of the nature and frequency of the plumes that are likely to be generated by this project because the EAEC is similar in size and design to this project and is located in area with generally similar meteorological conditions.

Based on the EAEC data, it is assumed that visible water vapor plumes generated by the project's cooling tower will be present for a total of from about 200 to 560 hours per year, with 165 to 216 of those hours occurring during daylight hours. It is also assumed that visible water vapor plumes will emanate from the HRSG stacks during a total of from 1,300 to 1,900 hours a year, with approximately 500 to 800 hours occurring at times when there is daylight. The cooling tower plumes will, on average, be approximately 60 to 75 meters high, and the maximum cooling tower plume height will be on the order of 300 to 700 meters. The HRSG stack plumes will, on average, be approximately 116 to 137 meters high, and the maximum height of the HRSG plumes is likely to be on the order of 800 meters.

Cooling tower and HRSG plumes present during nighttime hours will not be a major visual concern. During these hours, plumes would be visible only if there were sufficient natural or artificial light. Because of the measures that will be taken to reduce project lighting at the plant, any plumes that are

present during nighttime hours will not be highly visible. The 165 to 216 daytime hours that cooling tower plumes are likely to be present will occur on a total of approximately 50 to 100 days per year. The 500 to 800 daytime hours that the HRSG plumes are likely to be present will occur on a total of approximately 150 to 210 days per year. The daylight hours when cooling tower plumes will be present will constitute 4 percent to 5 percent of the total annual daylight hours and the daylight hours when HRSG plumes will be present will constitute 12 percent to 18 percent of daylight hours. The number and percentage of daylight hours when plumes will actually be visible will be less than these numbers suggest. Because the conditions under which the water vapor plumes are likely to form are also conditions under which fog and rain are likely to be present, some of the time that plumes are present, they will not be visible because of the fog and rain. An additional variable that needs to be considered in evaluating the visual implications of the project's water vapor plumes is that many of the daylight, non-fog, non-rain hours when plumes are present will occur during the winter at times when the sky is overcast. Under overcast conditions, the contrast of the plumes with the sky will be low, and because of the low degree of contrast, the visual salience of the plumes will be substantially reduced.

At times when the larger plumes created by the project will be present during non-fog, non-rain daylight hours, they will have the potential to be seen in much of the project viewshed. However, their visual salience will be greatest in the foreground zone, that is, the zone that extends out 1/4 mile to 1/2 mile from the project site. In the case of the CVEC, no residences are located within 1/4 mile of the proposed location of the energy center facilities and only a handful of residences lie within the 1/4 mile to 1/2 mile zone, and these are all located very close to the half mile radius line (refer to Figure 8.11-2). Within the City of San Joaquin, almost all of which is located 1/2 mile or more from the site, structures and trees in the foreground of views in the direction of the project site will play a significant role in screening views toward any project-related plumes and in directing viewer attention away from the portion of the sky in which the plumes may be located. The primary areas within the city from which plumes might be visible will be those places where there are views down the view corridors created by the northwest to southwest street alignments in the community's southeast quadrant like the one visible from KOP 4. An additional factor that needs to be taken into account is that the prevailing winds in this area blow from the northwest toward the southeast, and that as a consequence, under most circumstances, any plumes that might emanate from the project would tend to be blown away from the City of San Joaquin where most of the potential viewers are located. A contextual factor that needs to be considered in evaluating the visual implications of the project's plumes is that industrial facilities located on the north side of the City of San Joaquin and in neighboring communities are already the source of visible plumes and that at times, large clouds of smoke produced by agricultural burning are also seen in the area's skies.

8.11.4.4.6 Light and Glare

CVEC's effects on visual conditions during hours of darkness will be very limited. As indicated in Section 8.11.4.3, some night lighting will be required for operational safety and security. High illumination areas not occupied on a regular basis will be provided with switches or motion detectors to light these areas only when occupied. At times when lights are turned on, the lighting will not be highly visible offsite and will not produce offsite glare effects. The offsite visibility and potential glare of the lighting will be restricted by specification of non-glare fixtures, and placement of lights to direct illumination into only those areas where it is needed. The landscape screening to be installed around the site will further reduce the visibility of facility's night lighting, particularly in views from areas located close by.

Any lighting that might be installed to facilitate nighttime construction activities will, to the extent feasible and consistent with worker safety codes, be directed toward the center of the construction site and shielded to prevent light from straying off-site. Task-specific construction lighting will be used to the extent practical while complying with worker safety regulations.

8.11.4.4.7 Construction Period Impacts

The 20-acre construction laydown area will be located in the area to the north of the portion of the project site on which the energy center will be developed. Because of the large size of the project parcel, the laydown area will have a generous setback (200 feet or more) from Colorado Avenue, the closest street, and will be even more distant from other off-site viewing areas. The parked vehicles, equipment, and stored materials in this area will be most visible in views from nearby segments Colorado Avenue, which are best represented by KOPs 1 and 3. Although the vehicles, equipment, and stored materials in the laydown area will be readily visible in these views and will change their character to some degree, they will not substantially reduce their visual quality, which is now moderately low (KOP 1) and low (KOP 3). Once the plant structures start being put into place, they will have the effect of screening the laydown area in views from KOP 1. After development of the generating facility's structures is completed, all traces of the laydown area will be removed and the surface of the laydown area will be restored.

8.11.5 Impact Significance

Any visual effects of the project that will be significant under CEQA are identified below. The identification of these impacts has been structured by applying the criteria set forth in Appendix G of the State CEQA Guidelines. The CEQA Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including…objects of historic or aesthetic significance (14 CCR 15382)." The five questions related to aesthetics that are posed for lead agencies and the answers to them for the IEEC are:

1. *Would the project have a substantial adverse effect on a scenic vista?*

   No – There are no designated scenic roads or vista points in the project viewshed. In addition, as the analysis of the views from the Key Observation Points has established, the project would not affect any landscapes of more than moderate visual quality, and any effects to the existing visual quality of landscapes in the area would not be substantial.

2. *Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

   No – This question does not apply to CVEC project because none of the project facilities fall within the boundaries of a state scenic highway or other important scenic resource.

3. *Would the project substantially degrade the existing visual character or quality of the site and its surroundings?*

   No – The site itself is a flat parcel entirely devoted to large-scale production of irrigated row crops and does not contain any important visual resources. The site is located in an agricultural area at the edge of a small community's industrial zone and is located close to an existing transmission line and substation, and the nearby views in which it is seen vary in visual quality from low to moderately low. Although the presence of the project will change the character of nearby views toward the site to some degree, there will be little change in the visual quality of the views, particularly as the project landscaping matures. Although the views toward the site will be changed, they will not be changed in a way that could be construed as being substantially degraded. One view toward the site, the view from KOP 4, which is representative of views down residential streets in the City of San Joaquin's southeastern quadrant, is of moderate visual quality; however, from this viewpoint the effects on the view would be relatively small and would not "substantially degrade" the area's existing visual character or quality.

Project plumes would not substantially degrade the existing visual character of the site and its surroundings because the amount of time the plumes will be visible will be limited, because the general landscape setting is one in which visual plumes of various origins are already present, and because project-related plumes, to the extent to which they would appear, would not be highly visible from the areas in which the greatest numbers of viewers would be present.

4. *Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*

   No – As described in Section 8.11.4.3, project light fixtures will be restricted to areas required for safety, security, and operations; lighting will be directed onsite; it will be shielded from public view; and non-glare fixtures and use of switches, sensors, and timers to minimize the time that lights not needed for safety and security are on will be specified. These measures should substantially reduce the offsite visibility of project lighting. Offsite visibility of lighting will be further reduced by the landscape plantings that will provide additional screening of any lighting associated with the project's lower elements. Any lighting that might be installed to facilitate nighttime construction activities will, to the extent feasible and consistent with worker safety codes, be directed toward the center of the construction site and shielded to prevent light from straying offsite. Task-specific construction lighting will be used to the extent practical while complying with worker safety regulations. With these measures, lighting associated with the project construction and operation will not pose a hazard or adversely affect day or nighttime views toward the site.

5. *Would the project conflict with any applicable land use plan, policy, or regulation (including, but not limited to a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an aesthetic effect?*

   As documented in the LORS analysis in Section 8.11.2, the project will be in conformance with most of the applicable implementing policies, ordinances, or other regulations specifically related to visual resources identified in the provisions of the local plans and zoning ordinances that pertain to various features of the project.

   There is one area in which there is an obvious potential conflict – height limit. A variance will be needed for the 145-foot-high HRSG stacks to exceed the maximum 75-foot height limit permitted under the City's zoning ordinance. The zoning ordinance includes a provision that allows the City to grant variances to the height limit. If the City of San Joaquin grants this variance there will be no conflicts with any of the LORs related to visual resources.

8.11.6 Cumulative Impacts

No major projects are known to be in the planning stages at present for the area in the immediate vicinity of CVEC site. The City is now completing purchase of the 40-acre parcel to the west of the project site, and has the intent of converting this parcel to industrial use. However, no specific plans for this conversion have been initiated, and thus conversion of this parcel from agricultural to industrial use cannot yet be considered to be reasonably foreseeable. As a consequence, the area around the site can be expected to maintain its current appearance for the reasonably foreseeable future. Given this context, the assumption is that in the foreseeable future, there will be no other developments in the immediate vicinity of CVEC site that would have effects that CVEC would combine with to create cumulative visual resource impacts.

8.11.7 Mitigation Measures

8.11.7.1 Generating Facility

The mitigation measures listed below have been included in the project design to reduce the generating facility's impacts on visual resources:

Careful site planning and landscape design, including the following:

- Placement of the energy center as far to the south on the site as feasible to maximize its distance from potential viewers in the community of San Joaquin and from travelers on Manning Avenue.
- Placement of the water tanks, administration building, and other smaller structures on the northern edge of the site to create a transition in scale in views toward the energy center's taller features as seen from viewpoints along the southern edge of the community of San Joaquin.
- Creation of a 100-foot setback area between the edge of the Union Pacific Railroad right-of-way and the closest project feature (the cooling tower) to create a generous setback from Colorado avenue and provide room for landscape screening.
- Placement of landscaping, including fast-growing evergreen trees, along the perimeter of the site to screen the project's facilities from view and to provide a new feature of visual interest at the intersection of Colorado and Springfield avenues.
- Color treatment of fences to blend with the surrounding environment.
- Minimal signage and construction of project signs using non-glare materials and unobtrusive colors. The design of any signs required by safety regulations will need to conform to the criteria established by those regulations
- Minimization of lighting to areas required for safety, security, or operations, and shielding of lighting from public view to the extent possible. Timers and sensors will be used to minimize the time that lights are on in areas where lighting is not normally needed for safety, security, or operation.
- Direction and shielding of lighting to reduce light scatter and glare. Highly directional light fixtures will be used.

Additional mitigation measures to improve the appearance of the energy center may include the following:

- At present, the Applicant is proposing to use a palette of neutral gray tones for the project structures because these colors have been proven effective in reducing the contrast of large infrastructure facilities with sky and many landscape backdrops. These are the colors that are reflected in the visual simulations that have been prepared. If the City of San Joaquin and the CEC feel a need to evaluate color issues further, additional color studies can be conducted to refine the color scheme to maximize the visual integration of project facilities into their landscape backdrop and/or to make the project a more striking feature of visual interest in its own right.
- Design and installation of temporary cyclone fencing around the laydown area adjacent to the plant to reduce the visibility of construction period activities.
- In collaboration with the City of San Joaquin, establishment of decorative landscaping along the western edge of the 40-acre parcel that lies between Colusa Avenue and the project site that the City is now in the process of purchasing. These plantings would provide additional screening of

views toward the site from the two residences located on Colusa Avenue just north of Springfield Avenue.

8.11.7.2 Transmission Line

The following mitigation measures for the transmission line have been included in the project design:

- The towers will be constructed of tubular steel to create a trim profile.
- The towers will be treated with a neutral gray finish to maximize their visual integration into the backdrop.
- Non-specular conductors will be used.
- Insulators will be non-reflective and non-refractive.

8.11.7.3 Pipelines

The following mitigation measures have been included as a part of the project proposal to reduce the visual impacts of the proposed pipelines:

- After construction, ground surfaces will be restored to their original condition, and any vegetation that had been removed during the construction process will be replaced with like-kind vegetation.
- Equipment in the gas metering station will be painted earth-tone colors selected to maximize their visual integration into their backdrops, and the chain link fence surrounding the facility will be color treated to blend with its setting.

8.11.8 References

Amadeo, D., D.G. Pitt, and E.H. Zube. 1989. Landscape Feature Classification as a Determinant of Perceived Scenic Value, *Landscape Journal* 8(1): 36-50.

Buhyoff, G.J., P. A. Miller, J. W. Roach, D. Zhou, and L. G. Fuller. 1994. An AI Methodology for Landscape Visual Assessments. AI Applications. Vol. 8, No 1. pp. 1-13.

City of San Joaquin. 1996. Comprehensive General Plan and EIR.

City of San Joaquin. 2001a. Initial Study and Negative Declaration for the Southeast Area Annexation. May.

City of San Joaquin. 2001b. Zoning Ordinance Title 17 of the San Joaquin Municipal Code.

Fresno County. 2000. Public Review Draft of General Plan. January.

Fresno County. 2001a. The Zoning Division of the Fresno County Ordinance Code.

Fresno County. 2001b. Fresno County General Ordinance Code.

Goulty, G. A. 1990. *Visual Amenity Aspects of High Voltage Transmission*. Taunton, Somerset, England: Research Studies Press, Ltd.

Hami, Shahid. 2001. City Manager, City of San Joaquin. Personal Communication with Thomas Priestley, CH2M Hill. July 30.

Hydro-Quebec and Electricite de France. 1996. *L' integration dans l'environnement des ouvrages de transport d'energie electrique.*

Kaplan, R. 1985. The Analysis Of Perception Via Preference: A Strategy For Studying How The Environment Is Experienced, *Landscape Planning* 12: 161-176.

Kaplan, S. 1979. Concerning The Power Of Content Identifying Methodologies, Pages 4-13 in: *Assessment of Amenity Resource Values*, T.C. Daniel and E.H. Zube, editors. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Kaplan, S. and R. Kaplan. 1982. *Cognition and Environment: Functioning in an Uncertain World*, Praeger Publishers, New York, New York.

Lancaster, M. 1996. *Colourscape*, Academy Editions, London, England.

Lancaster, M. 1984. *Britain in View, Colour and the Landscape*, Quiller Press, Ltd., London, England.

Perkins, Richard. 2001. Planner, Fresno County Department of Planning and Resource Mangement. Personal Communication with Robyn Smith, CH2M Hill. August 7.

Ribe, R.G. 1989. The Aesthetics Of Forestry: What Has Empirical Preference Research Taught Us? *Environmental Management* 13(1): 55-74.

Shafer, E.L., Jr., J.F. Hamilton, Jr., and E.A. Schmidt. 1969. Natural preferences: A predictive model, *Journal of Leisure Research* 1(1): 1-19.

U.S. Department of Agriculture (USDA) Forest Service. 1973. *National Forest Landscape Management Volume 1*. Washington, D.C.: Superintendent of Documents.

1 MILE RADIUS

PROJECT SITE

2 MILE RADIUS

3 MILE RADIUS

LEGEND

- PROJECT SITE
- AREAS FROM WHICH VIEWS TOWARD PROJECT WOULD BE PARTIALLY TO FULLY OBSCURED
- PROPOSED WATER LINE ALIGNMENT
- PROPOSED GAS LINE ALIGNMENT

N

3000 0 3000 Feet

SCALE IS APPROXIMATE

FIGURE 8.11-1
PROJECT VIEWSHED
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION

CH2MHILL

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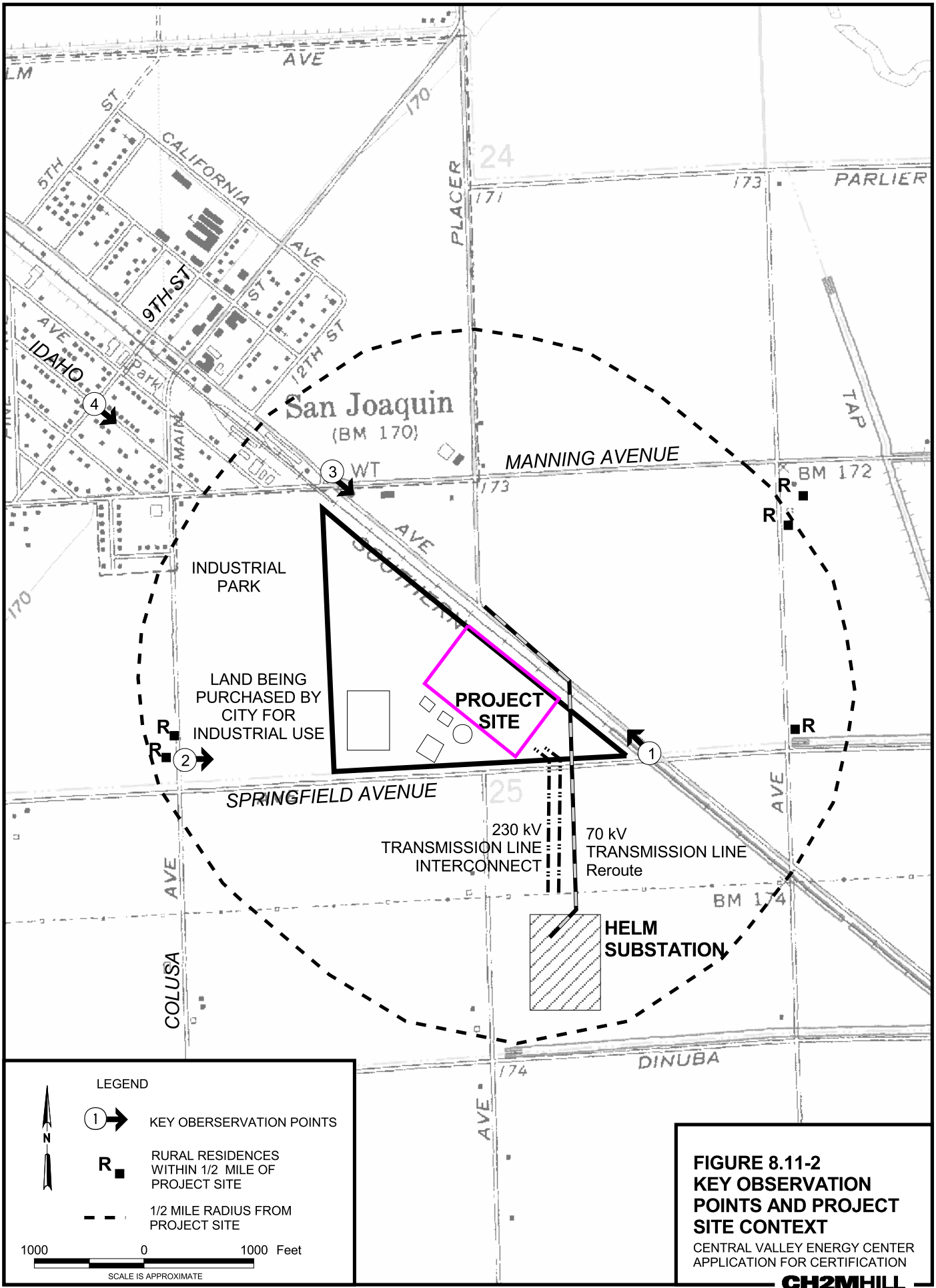

LEGEND

1 → KEY OBERSERVATION POINTS

R ■ RURAL RESIDENCES WITHIN 1/2 MILE OF PROJECT SITE

- - - 1/2 MILE RADIUS FROM PROJECT SITE

N

1000 0 1000 Feet

SCALE IS APPROXIMATE

FIGURE 8.11-2
KEY OBSERVATION POINTS AND PROJECT SITE CONTEXT
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION

CH2MHILL

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FIGURE 8.11-3a
KOP1 - EXISTING VIEW
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION

CH2MHILL

E102001004SAC exhibit001 (fig8_11-3a).fh9

FIGURE 8.11-3b
KOP1 - VISUAL SIMULATION OF PROJECT AT START OF OPERATION
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION

CH2MHILL

E102001004SAC exhibit002 (fig8_11-3b).fh9

FIGURE 8.11-3c
KOP1 - VISUAL SIMULATION OF PROJECT AT 20 YEARS
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION

CH2MHILL

E102001004SAC exhibit003 (fig8_11-3c).fh9

FIGURE 8.11-4a
KOP2 - EXISTING VIEW
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION
CH2MHILL

FIGURE 8.11-4b
KOP2 - VISUAL SIMULATION OF PROJECT AT START OF OPERATION
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION
CH2MHILL

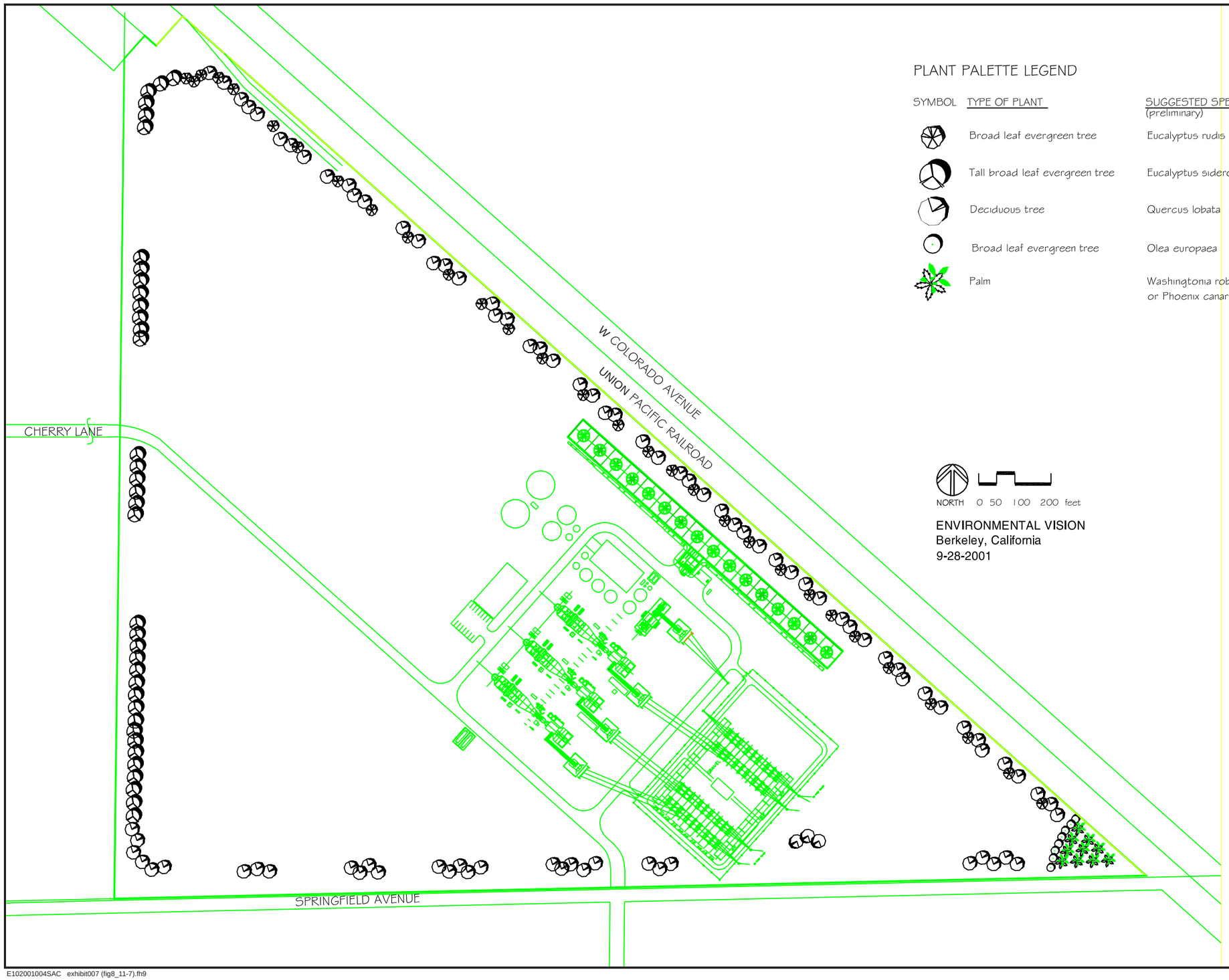
FIGURE 8.11-5a
KOP3 - EXISTING VIEW
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION
CH2MHILL

FIGURE 8.11-5b
KOP3 - VISUAL SIMULATION OF PROJECT AT START OF OPERATION
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION
CH2MHILL

E102001004SAC exhibit005 (fig8_11-5a_5b).fh9

FIGURE 8.11-6a
KOP4 - EXISTING VIEW
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION
CH2MHILL

FIGURE 8.11-6b
KOP4 - VISUAL SIMULATION OF PROJECT AT START OF OPERATION
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION
CH2MHILL



PLANT PALETTE LEGEND

SYMBOL	TYPE OF PLANT	SUGGESTED SPECIES (preliminary)	SIZE	NUMBER SHOWN
	Broad leaf evergreen tree	Eucalyptus rudis	15 gal.	30
	Tall broad leaf evergreen tree	Eucalyptus sideroxylon	15 gal.	33
	Deciduous tree	Quercus lobata	15 gal.	100
	Broad leaf evergreen tree	Olea europaea	15 gal.	8
	Palm	Washingtonia robusta or Phoenix canariensis	25'	10

ENVIRONMENTAL VISION
Berkeley, California
9-28-2001

FIGURE 8.11-7
CONCEPTUAL LANDSCAPE PLAN
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION

CH2MHILL

E102001004SAC exhibit007 (fig8_11-7).fh9